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EDWARD SAMUEL RITCHIE.

EDWARD SAMUEL RITCHIE, son of John and Eliza (Eliot) Ritchie, was born in Dorchester, Massachusetts, August 18, 1814. After living some years in Dorchester, his father moved to North Bridgewater. During the years 1827 and 1828 he attended school at the Friends Academy in New Bedford. In 1829 he was taught by Rev. John Goldsbury, in North Bridgewater, studying mornings and working for a furniture maker in the afternoons, as he had mechanical aptitudes, and wished to learn the use of tools.

Early in life he showed great interest in art and in science. He was the only surviving child of a family of six, and his father gave him every advantage to help him in studies in which he was particularly interested. His health was extremely delicate in youth, and that added to a very sensitive nature prevented him from taking a collegiate education, which his father was anxious he should have. He had a laboratory to work out experimentally what interested him, and was a very close student. Having great power of concentration, he was entirely oblivious to everything around him when he was particularly interested in any subject.

He had also a great love for music, and was a good musician, giving his services as an organist for several years to the Episcopal Church in New Bedford, in which he was senior warden.

While living in New Bedford he constructed a telescope for his own use, which he afterwards sold to the Friends Academy, where he had formerly been a scholar.

He was much interested in sculpture, and has left very creditable work in several cameos and a nude figure, two thirds life-size, of a nymph of his own posing. He made the clay figure, plaster cast, and cutting in marble, doing all the work from the beginning. He thought seriously of going to Rome to make that art a life study, but, being a devoted son, was unwilling to be separated from his aged mother.

In 1850 he entered into partnership with N. B. Chamberlain, a philosophical instrument maker. His business previous to this had never been pleasant to him, but this was quite to his taste. After a short time the partnership was dissolved, and Mr. Ritchie continued the business alone.

His improvement in the induction coil brought him into public notice. In 1851 Ruhmkorff of Paris constructed the coil which yet bears his name. He succeeded in producing sparks about two inches in length. Ritchie perceived that the defect of the Ruhmkorff coil was insufficient

insulation of the secondary coil. He concluded that, if this were divided into sections properly insulated from each other, the device would be more efficient and give a longer spark. On trial, his expectations were realized. One of these coils was exhibited at a meeting of the British Association held in Dublin in 1857, and afterwards at the University of Edinburgh. A description of Ritchie's coil was published in Silliman's Journal and in the Journal of the Franklin Institute. M. Ruhmkorff procured one, and, copying it successfully, received a prize from the French government for it, — a proceeding which greatly disappointed Mr. Ritchie, who was entitled to it. The improvement of Mr. Ritchie transformed the coil from being a toy giving a two-inch spark to an instrument capable of giving a flash two feet or more in length, and approaching the characteristics of lightning.

At the time of our Civil War Mr. Ritchie's attention was called to the need of a better compass for our navy. The English Admiralty Compass, considered the finest in the world, was in general use at that time. In order to aid his study in making his improvements in this instrument, he made a support so constructed as to give the motions of a vessel at sea.

After much thought and labor he invented the Monitor and Liquid Compasses. The former did good service during the war, and the latter was at once adopted by the Navy, and is now in use all over the world.

He also constructed about that time another instrument which was a great help to the Navy, the Theodolite, fastened to a pendulum hanging in a tank of water, which enabled surveys to be taken of the harbors on the Atlantic and Gulf coasts. For these inventions of high merit he will be long remembered by the scientific world.

He was an exceedingly conscientious man, and was ever ready to help others over difficulties which he had overcome himself, and sometimes such persons received the credit and financial profit which rightly belonged to him.

He died on June 1, 1895, in his eighty-first year.

1896.

A. E. DOLBEAR.

MARTIN BRIMMER.

THE various distinguished bodies to which our deceased associate, HON. MARTIN BRIMMER, belonged, have already paid him such varied and appreciative tributes that a detailed biography, in the ordinary sense of the word, would be quite out of place. Nor was his life itself so distinguished by striking adventures or significant dis-